

## **Appendix A: EPA Coal Remining Database - 61 State Data Packages**



## **APPENDIX A: EPA Coal Remining Database - 61 State Data Packages**

### **Information Collection**

In an effort to assess the implementation of Best Management Practices during remining and reclamation activities in the Eastern United States, the EPA requested that the Interstate Mining Compact Commission (IMCC) collect information from stakeholder States involved in the IMCC Remining Task Force. The information was to support EPA's efforts to propose a coal remining subcategory under 40 CFR part 434. The goal of the information request was to collect existing information and data for assessment of the benefits, limitations, and feasibility of maintaining or improving environmental quality during and after remining operations. IMCC specifically requested information on abandoned mine land conditions, BMP implementation plans, water quality data, cost information, production statistics, and remining operations.

Six states (Alabama, Kentucky, Pennsylvania, Tennessee, Virginia, and West Virginia) responded to the request for information and submitted a total of 61 individual data packages from remining operations and reclamation projects. The data and information were submitted to EPA and were used to develop this BMP Guidance Manual in support of proposal of a Remining subcategory. Details of the types of information and data collected are provided in Table A.1. Data and information submitted included permits, permit applications, water quality monitoring reports, inspection reports, bore hole analysis logs, and operational information.



**Table A.1: Data Targeted by EPA Information Request**

<b>Water Quality / Environmental Benefits</b>	
	Environmental Assessment Abatement Plans Impact Statistics:      Abandoned Surface Mine acres affected Abandoned Underground Mine acres affected Abandoned Highwall linear feet affected/removed Pre-existing discharges encountered/affected Stream Miles degraded by AMD (EPA 303(d) list)
<b>Industry Profile - by State</b>	
	Number of companies Number of mine sites Types of mining activities Production statistics
<b>Permit Applications</b>	
<b>Permits</b>	
<b>Environmental Resources Maps</b>	
<b>Geology Information</b>	
	Overburden Analyses Borehole Analyses
<b>Hydrologic Assessment</b>	
	Chemical Analysis (Background Monitoring Reports - Concentration) (Flow, pH, Conductivity, Temp., Alkalinity, Acidity, Fe, Mn, Al, SO <sub>4</sub> , TSS/TDS)  Ground Water Information Surface Water Information Pre-existing Discharge Information Public Water Supply Information
<b>Operational Information</b>	
	Reclamation/Operation Description and Maps Reclamation Cost Estimate / Time Schedule Identification of Final Grading and Drainage Pattern
<b>Production Statistics</b>	
	Annual and overall coal production (tonnage) Annual and overall profit Number of employees
<b>Cost Information</b>	
	Cost of BMP implementation versus cost of treatment (pre-existing discharges)

<b>Best Management Practices (BMPs) - descriptions/typical combinations</b>	
	Regrading Daylighting Management of toxic and acid forming materials Addition of alkaline materials Hydrologic controls: diversion ditches, mine seals, hydraulic barriers Revegetation Stabilization Application of Biosolids
<b>Remining Plans</b>	
	Identification of Affected Abandoned Mine Areas, Highwalls, and Preexisting Discharges Background History of Preexisting Discharges Baseline Pollution Load Analysis and Data Abatement Plan / BMP Application and Description / BMP Implementation Costs Water Quality Monitoring Program Anticipated Pollution Reduction Benefits - Impact on Water Quality - Benefits Treatment Costs Schedule
<b>Topographic Maps</b>	

## Remining Database

All data submitted for the 61 mining and reclamation operations has been entered into EPA's Remining Database, 1999, which was designed specifically to contain the data and information provided in these data packages. The database design is shown in Figure A-1. The final version of the database (May, 1999) is available on CD-ROM from EPA's Sample Control Center, and can be requested by calling the Sample Control Center at 703/461-2025. The CD-ROM is accompanied by the Coal Remining Database User's Manual and Database Data Element Dictionary.

The Remining Database contains both qualitative and quantitative data. Because not all solicited information was available or applicable to all 61 sites, some database fields are empty. Numeric data is provided in the geology, surface water, ground water, and mine discharge sections of the database and was entered as was reported by the States. The narrative information was taken from the mine site permits, permit applications, abatement plans, or related information.

Figure A.1: EPA Remining Database Design

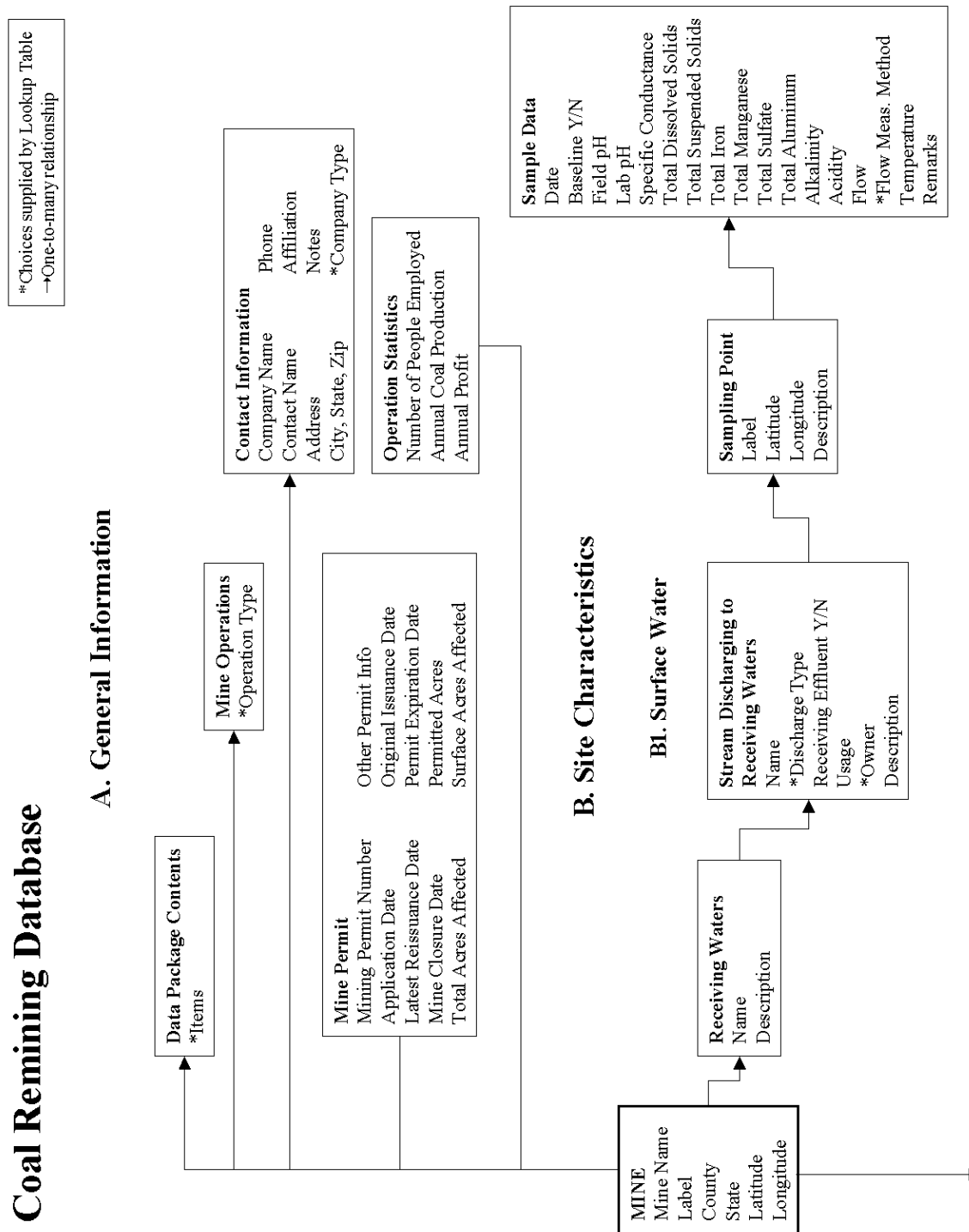


Figure A.1: EPA Remining Database (continued)

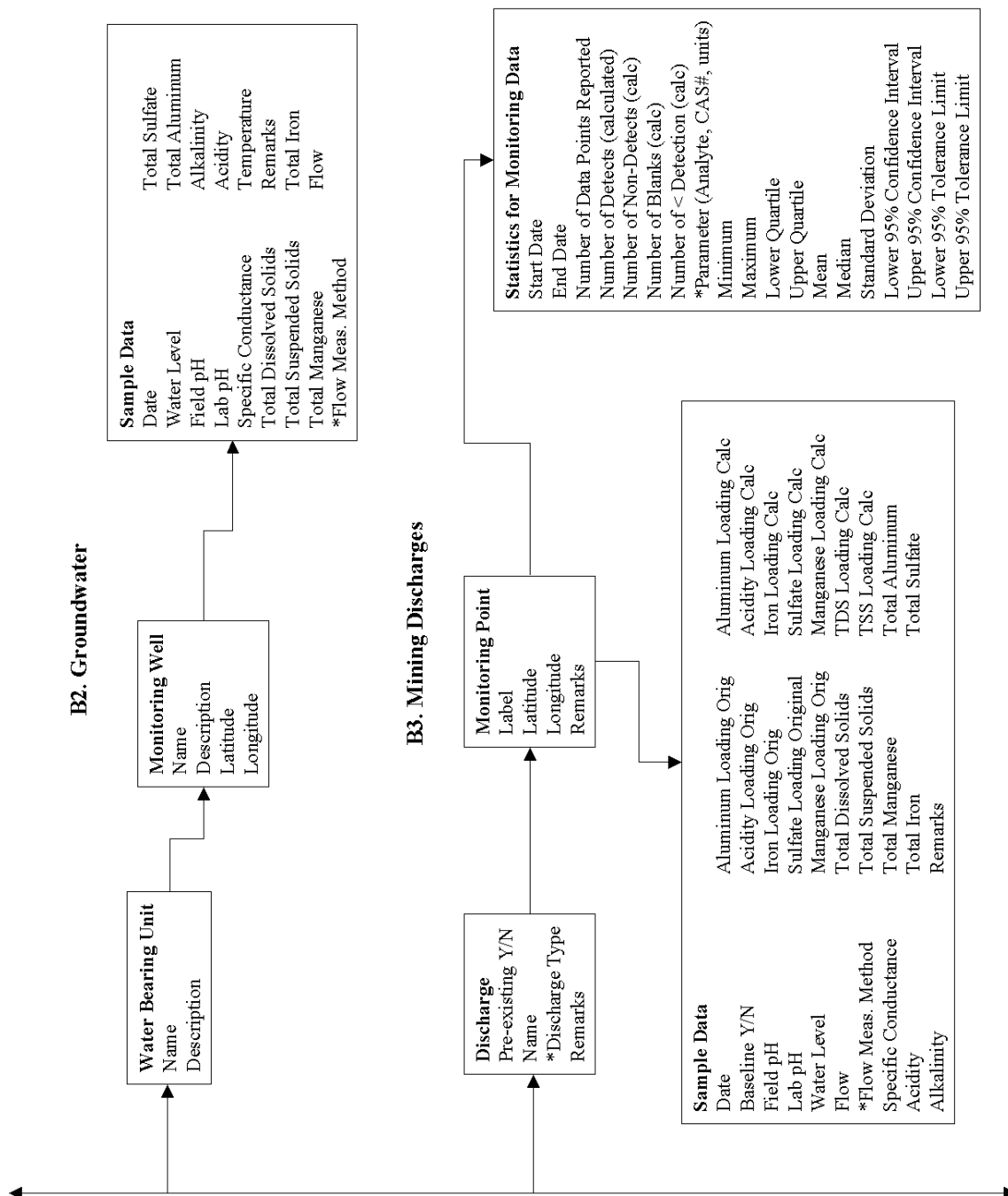
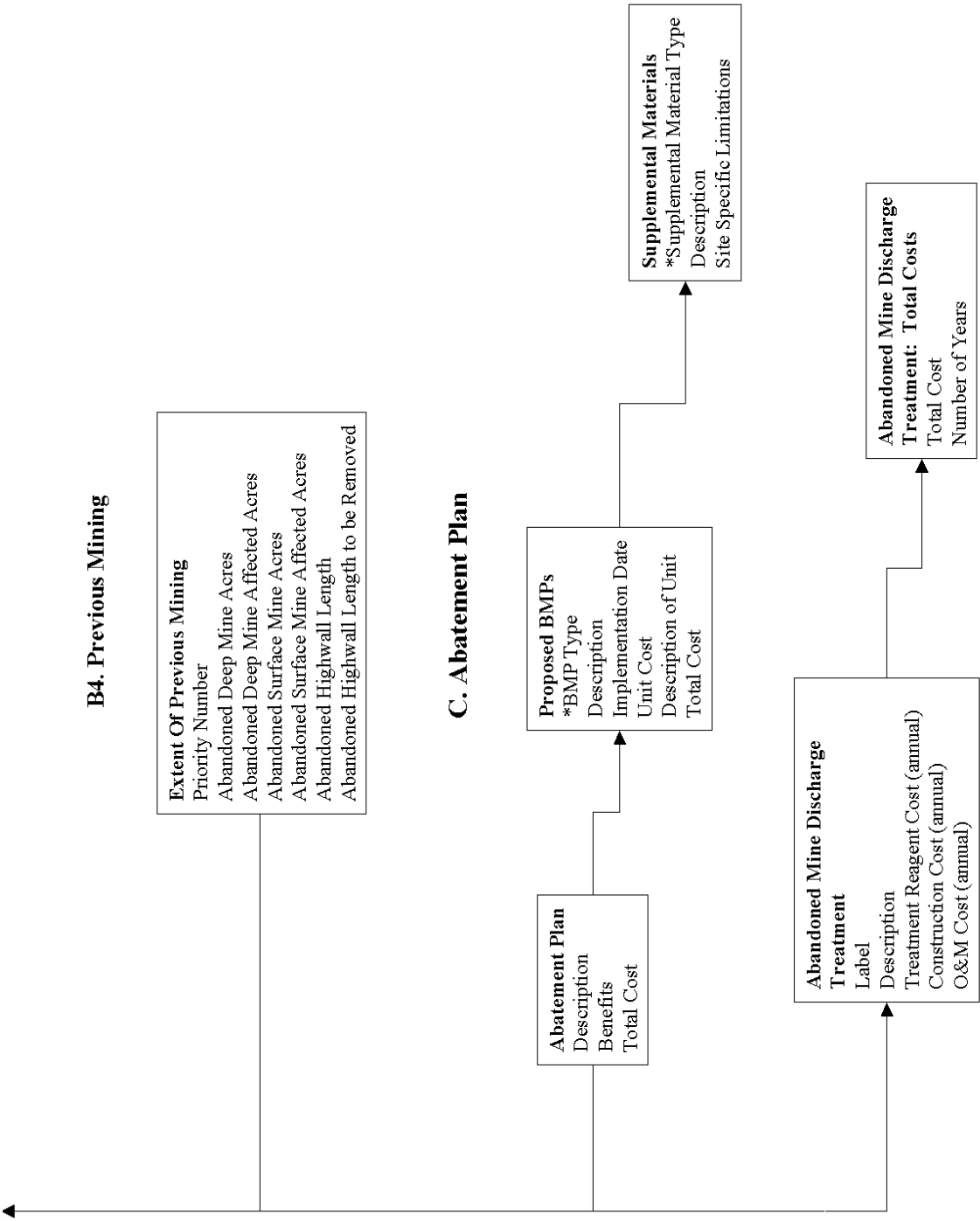


Figure A.1: EPA Remining Database (continued)





## Information Summary

A summary of the information is given in the following tables.

- **Table A.2:** According to the information provided by the data packages and subsequent contact responses, 30 of the 61 operations were closed as of the date the data were submitted. Mine closure dates for mines that are known to be closed, are included in Table A.2.
- **Table A.3:** Contains information on the extent and type of abandoned mine land and the extent the abandoned mine land was expected to be affected by remining operations.
- **Table A.4:** Contains the type of mining or reclamation operations and the coal seams mined for each site. In some cases, a remining operation involved reclamation of abandoned spoils piles and no coal seams were mined.
- **Table A.5:** Lists the BMPs implemented during remining or reclamation activities. The BMPs are listed in the order presented in this document with the mine sites that implemented each BMP.
- **Table A.6:** Lists the BMPs implemented during remining or reclamation activities. The BMPs are organized by the mine sites which implemented them.



**Table A.2: Mine Site Status and Permit Information**

<b>Mine ID</b>	<b>Issuance Date</b>	<b>Expiration Date</b>	<b>Mine Closure Date</b>	<b>Rahall Permit</b>
AL(1)	07/05/1983	07/04/2003	Active Site	Yes
AL(2)	08/24/1989	08/23/1994	Early 1991	Yes
AL(3)	09/11/1989	09/10/1999	08/18/1998	Yes
AL(4)	12/06/1989	12/05/1999	Active Site	Yes
AL(5)	03/16/1990	03/15/2000	10/1995	Yes
AL(6)	09/19/1990	09/18/1995	08/1994	Yes
AL(7)	03/06/1991	03/05/1996	07/17/1992	Yes
AL(8)	06/03/1992	06/02/1999	Active Site	Yes
AL(9)	06/09/1992	06/08/1997	03/1994	Yes
AL(10)	03/08/1994	03/07/1999	02/1996	Yes
AL(11)	Unknown	Unknown	Mining Suspended	Yes
AL(12)	07/30/1991	Unknown	12/01/1998	Yes
AL(13)	01/23/1991	Unknown	10/10/1994	Yes
AL(14)	12/08/1986	Unknown	Early 1990	Yes
AL(15)	01/28/1988	01/27/1993	Permitted, but never mined	Yes
AL(16)	Unknown	Unknown	Reclaiming	Yes
KY(1)	07/18/1997	07/18/2002	Active	Yes
KY(2)	09/19/1997	09/19/2002	Active	Yes
KY(3)	08/13/1991	09/13/1994	Shut down 11/1998, may reopen	Yes
KY(4)	04/04/1995	08/31/2002	Active	Yes
PA (1)	04/02/1991	04/02/2001	10/30/1998	Yes
PA(2)	05/23/1989	05/23/1999	Active	Yes
PA(3)	05/25/1990	05/25/1995	06/23/1998	Yes
PA(4)	04/13/1988	04/13/2003	Active	Yes
PA(5)	02/01/1995	02/01/2000	04/09/1998	Yes
PA(6)	04/13/1990	04/13/2000	08/15/1996	Yes
PA(7)	09/15/1989	09/15/1999	05/01/1996	Yes
PA(8)	09/01/1993	09/01/1998	Active	Yes
PA(9)	Unknown	Unknown	Active	Yes
PA(10)	11/06/1990	11/06/1995	11/06/1995	Yes
PA(11)	04/25/1990	04/25/2000	Active	Yes
PA(12)	05/11/1992	05/11/2000	Active	Yes
PA(13)	02/24/1989	06/13/1999	Unknown	Yes
PA(14)	08/24/1987	08/24/2002	Active	Yes
PA(15)	03/15/1985	03/15/2000	Active	Yes
PA(16)	06/01/1992	06/01/2002	Active	Yes
PA(17)	02/12/1990	02/12/2000	Active	Yes
PA(18)	12/12/1996	12/12/2001	Active	Yes
PA(19)	12/23/1997	12/23/2002	Active	Yes
TN(1)	01/24/1992	Unknown	Active	No
TN(2)	07/25/1980	07/25/1981	Bond returned by State, 1984	No
TN(3)	05/08/1997	Unknown	04/09/1998, Phase I Bond Release Only	No

<b>Mine ID</b>	<b>Issuance Date</b>	<b>Expiration Date</b>	<b>Mine Closure Date</b>	<b>Rahall Permit</b>
<b>TN(4)</b>	11/22/1996	06/27/1998	Active	No
<b>TN(5)</b>	12/16/1991	Unknown	12/16/1994, Bond Forfeited	No
<b>VA(1)</b>	12/05/1994	07/24/2002	10/05/1998	No
<b>VA(2)</b>	10/03/1990	Unknown	12/07/1993	No
<b>VA(3)</b>	01/16/1988	Unknown	12/12/1997	No
<b>VA(4)</b>	None	None	Closed	No
<b>VA(5)</b>	None	None	Closed	No
<b>VA(6)</b>	01/16/1992	Unknown	Active	Yes
<b>VA(7)</b>	06/20/1990	Unknown	Active	Yes
<b>VA(8)</b>	09/27/1996	Unknown	Active	Yes
<b>WV(1)</b>	Unknown	Unknown	Active	Yes
<b>WV(2)</b>	10/16/1987	09/14/1992	12/05/1991	No
<b>WV(3)</b>	Unknown	07/14/1999	Active	Yes
<b>WV(4)</b>	02/21/1990	01/16/2003	11/16/1995, Phase I only	No
<b>WV(5)</b>	01/06/1994	01/06/1999	Active	Yes
<b>WV(6)</b>	03/26/1985	01/10/2000	Active	Yes
<b>WV(7)</b>	09/23/1983	09/23/1988	11/26/1991	No
<b>WV(8)</b>	08/05/1993	08/05/1998	Active	Yes
<b>WV(9)</b>	10/01/1981	09/14/1997	03/10/1997	No
<b>WV(10)</b>	03/25/1985	03/25/1990	07/10/1996	No

**Table A.3: Extent of Abandoned Mine Lands**

Mine ID	ADM <sup>1</sup> (Acres)	Affected ADM (Acres)	ASM <sup>2</sup> (Acres)	Affected ASM (Acres)	AH <sup>3</sup> (feet)	AH Removed (feet)
AL(1)	0	0				
AL(2)	0	0			0	0
AL(3)	0	0				
AL(4)	0	0				
AL(5)						
AL(6)	0	0	21			
AL(7)			64			
AL(8)						
AL(9)	0	0			0	0
AL(10)			18	18		
AL(11)						
AL(12)						
AL(13)						
AL(14)	0	0	9	9	0	0
AL(15)						
AL(16)						
KY(1)	36.1	36.1	186.7	186.7		
KY(2)			246.4	246.4		
KY(3)			181	181		
KY(4)			186.1	186.1		
PA (1)	29.8	3.6	0	0	0	0
PA(2)	56.5	0	50	50	0	0
PA(3)	90	49	69.9	33.8	0	0
PA(4)	81.8	0	43.8	43.8		
PA(5)	0	0	77.4	63.9	1100	1100
PA(6)	28.3	5	24.8	15.5	2600	1700
PA(7)					35; 50	
PA(8)	27.2	27.2	0	0	0	0
PA(9)	128.9	103.5	187.4	187.4	11,788	11,788
PA(10)	0	0	32.2	15.6	2150	1800
PA(11)	66.1	23.7	65	37.8		
PA(12)						
PA(13)						
PA(14)						
PA(15)						
PA(16)	0		311	311		
PA(17)	0	0	729.7	60.6 to 678	61730	10880 to 61730
PA(18)	2725	640	650	500	106,350	52,300
PA(19)	0	0	29.3	3	1450	1450
TN(1)						

Mine ID	ADM <sup>1</sup> (Acres)	Affected ADM (Acres)	ASM <sup>2</sup> (Acres)	Affected ASM (Acres)	AH <sup>3</sup> (feet)	AH Removed (feet)
TN(2)						
TN(3)						
TN(4)						
TN(5)						
VA(1)			265			
VA(2)			37.4			
VA(3)			105			
VA(4)						
VA(5)						
VA(6)	252.19		590	485.19		
VA(7)			1140.25	1140.25		
VA(8)			1440	1440		
WV(1)						
WV(2)						12000
WV(3)						
WV(4)	0	0	67	67	2,400	
WV(5)			92	92		
WV(6)						
WV(7)					13,000	
WV(8)						
WV(9)	94	94	54	54	8400	
WV(10)					17,832	

Note: Blank cells indicate that no mention was made of the existence of that type of abandoned mine land. Zeros are used in the table to show that the mining operator specifically mentioned that the type of abandoned mine land was not present or affected.

<sup>1</sup>Abandoned deep mine

<sup>2</sup>Abandoned surface mine

<sup>3</sup>Abandoned highwall

**Table A.4: Type of Mining and Coal Seams Mined**

<b>Mine ID</b>	<b>Coal Seams Mined</b>	<b>Type of mining</b>
<b>AL(1)</b>	Jefferson and Lick Creek	Surface Mining
<b>AL(2)</b>	Suwanee	Surface Mining
<b>AL(3)</b>	Blue Creek and Jefferson	Surface Mining
<b>AL(4)</b>	Black Creek	Surface Mining
<b>AL(5)</b>	Pratt Group	Surface Mining
<b>AL(6)</b>	Black Creek and Jefferson	Bituminous and Surface Mining
<b>AL(7)</b>	Utley Coal Group	Surface Mining
<b>AL(8)</b>	Mary Lee	Surface Mining
<b>AL(9)</b>	Atna, Cliff, and Underwood	Surface Mining
<b>AL(10)</b>	Guide, Upper Brookwood, Lower Brookwood, Milldale, Carter, and Johnson	Auger Mining and Surface Mining
<b>AL(11)</b>	Unknown	Bituminous and Surface Mining
<b>AL(12)</b>	Pratt, Nickel Plate, and America	Bituminous and Surface Mining
<b>AL(13)</b>	Guide, Brookwood, Upper Milldale, Lower Milldale, and Carter	Surface Mining
<b>AL(14)</b>	None	Bituminous, Surface Mining, and Coal Refuse Disposal
<b>AL(15)</b>	Unknown	Bituminous and Surface Mining
<b>AL(16)</b>	None	Coal Preparation Plant and Surface Mining
<b>KY(1)</b>	None	Coal Refuse Reprocessing, Surface Mining, and Remining
<b>KY(2)</b>	Amburgey, Hazard No. 4, Hazard No.4 Rider, Hz #7, Hz A, and Whitesburg	Surface Mining, Auger Mining, and Remining
<b>KY(3)</b>	USGS #11, USGS #12, and USGS #13	Auger Mining, Refuse Storage, and Surface Mining
<b>KY(4)</b>	USGS #11, USGS #12, USGS #13, USGS #14, and USGS #9	Auger Mining and Surface Mining
<b>PA(1)</b>	Lower Freeport, Upper Freeport, and Upper Freeport Rider	Bituminous, Surface Mining, and Reclamation Operations
<b>PA(2)</b>	USGS #11	Bituminous, Coal Refuse Reprocessing, Fly Ash/Bottom Ash Disposal, and Surface Mining
<b>PA(3)</b>	Pittsburgh	Bituminous and Surface Mining

Mine ID	Coal Seams Mined	Type of mining
PA(4)	Pittsburgh	Bituminous, Coal Refuse Reprocessing, and Remining
PA(5)	Lower Kittanning and Middle Kittanning	Bituminous and Surface Mining
PA(6)	Upper Freeport	Auger Mining, Bituminous, Remining, and Surface Mining
PA(7)	Boney, Lower Freeport, Upper Freeport, and Upper Kittanning	Auger Mining, Coal Refuse Disposal, and Surface Mining
PA(8)	Lower Kittanning and Middle Kittanning,	Surface Mining
PA(9)	Lower Freeport, Lower Kittanning, Middle Kittanning, and Upper Kittanning	Mobile Coal/ Rock Processing, Remining, and Surface Mining
PA(10)	Lower Bakerstown	Remining and Surface Mining
PA(11)	Lower Freeport, Upper Freeport, and Upper Kittanning	Auger Mining, Bituminous, and Surface Mining
PA(12)	Upper Freeport	Auger Mining, Bituminous, Coal Refuse Reprocessing, Fly Ash/Bottom Ash Disposal, and Surface Mining
PA(13)	Lower Freeport, Lower Kittanning, Middle Kittanning, and Upper Kittanning	Auger Mining, Bituminous, and Surface Mining
PA(14)	None	Anthracite, Coal Preparation Plant, Coal Refuse Disposal, Coal Refuse Reprocessing, and Fly Ash/Bottom Ash Disposal
PA(15)	Buck Mountain, Holmes, Mammoth Bottom, Mammoth Top, Orchard, Primrose, Seven Foot Vein, and Skidmore	Anthracite and Surface Mining
PA(16)	Buck Mountain, Holmes, Little Buck Mountain, Mammoth Bottom, Mammoth Top, Seven Foot Vein, and Skidmore	Anthracite, Coal Refuse Disposal, Coal Refuse Reprocessing, and Surface Mining
PA(17)	Bottom Split Mammoth Vein, Diamond Vein, Holmes, Middle Split, Mammoth Vein, Primrose, Seven Foot Vein, and Skidmore	Anthracite, Coal Refuse Disposal, Remining, and Surface Mining
PA(18)	Holmes, Mammoth, and Primrose	Anthracite, Coal Refuse Disposal, Coal Refuse Reprocessing, Fly Ash/Bottom Ash Disposal, Reclamation Operations, and Remining
PA(19)	Lower Kittanning No. 2 and Lower Kittanning No. 3	Remining and Surface Mining
TN(1)	Blue Gem, Coal Creek, and Jellico	Auger Mining and Surface Mining
TN(2)	Sewanee	Surface Mining
TN(3)	Sewanee	Deep Mining Reclamation and Surface Mining

<b>Mine ID</b>	<b>Coal Seams Mined</b>	<b>Type of mining</b>
<b>TN(4)</b>	Sewanee	Auger Mining and Surface Mining
<b>TN(5)</b>	Coal Creek	Reclamation Operations
<b>VA(1)</b>	Clintwood, Lower Bolling, Lower Standiford, Meade Fork, Pinhook, Upper Bolling, and Upper Standiford	Auger Mining, Remining, and Surface Mining
<b>VA(2)</b>	Lower Clintwood, Middle Clintwood, and Upper Clintwood	Auger Mining, Bituminous, Remining, and Surface Mining
<b>VA(3)</b>	Blairs, Clintwood, Dorchester, Lyons, and Norton	Auger Mining, Remining, and Surface Mining
<b>VA(4)</b>	No Seams Mined	Reclamation Operation
<b>VA(5)</b>	No Seams Mined	Reclamation Operation
<b>VA(6)</b>	Bastard Seam, Cedar Grove, Housecoal, Imboden Marker, Jackrock, Low Splint, Lower Kelly, Lower Standiford, Owl, Taggart, Taggart Marker, and Upper Standiford	Bituminous, Remining, and Surface Mining
<b>VA(7)</b>	Bottom Taggart, Cedar Grove, Imboden Marker, Kelly Rider, Lower Kelly, Lower Standiford, Owl, Taggart Marker, Top Taggart, Upper Kelly, and Upper Standiford	Surface Mining
<b>VA(8)</b>	Clintwood	Surface Mining
<b>WV(1)</b>	Clarion, Lower Kittanning, Lower Mercer, Middle Kittanning, and Upper Mercer	Deep Mining Reclamation, Remining, Surface Mining, and Underground Mining
<b>WV(2)</b>	Upper Freeport	Auger Mining and Surface Mining
<b>WV(3)</b>	Bakerstown, Brush Creek, Harlem, and Upper Freeport	Fly Ash/Bottom Ash Disposal, Remining Modification, and Surface Mining
<b>WV(4)</b>	Castle and Sewell	Surface Mining
<b>WV(5)</b>	Upper Freeport	Fly Ash/Bottom Ash Disposal and Surface Mining
<b>WV(6)</b>	Upper Freeport	Fly Ash/Bottom Ash Disposal and Surface Mining
<b>WV(7)</b>	Pittsburgh and Redstone	Surface Mining
<b>WV(8)</b>	Pittsburgh	Deep Mining Reclamation, Fly Ash/Bottom Ash Disposal, and Surface Mining
<b>WV(9)</b>	Big Inch, Little Pittsburgh, and Morantown	Reclamation Operations and Surface Mining
<b>WV(10)</b>	Unknown	Surface Mining



**Table A.5: BMPs and the mines that implemented them**

<b>BMP</b>	<b>Mine ID</b>
<b>Exclusion of Infiltrating Surface Water</b>	
Regrading Abandoned Mine Spoil	All mines
Installation of Surface Water Diversion Ditches	AL(1), AL(3), AL(4), AL(5), AL(11), KY(3), TN(5), VA(1), VA(4), VA(6), WV(1), WV(5), WV(6), WV(8)
Low-Permeability Caps or Seals	VA(5)
Revegetation	All mines
Stream Sealing	None
<b>Control of Infiltrating Ground Water</b>	
Daylighting of Underground Mines	AL(12), KY(2), PA(1), PA(3), PA(6), PA(7), PA(8), PA(9), PA(11), PA(12), PA(17), PA(18), TN(3), VA(1), VA(7), VA(8), WV(1), WV(2)
Sealing and Rerouting of Mine Water from Abandoned Workings	KY(3), KY(4), PA(1), PA(3), PA(10), TN(3), TN(4), VA(6)
Highwall Drains	None
Pit Floor Drains	TN(1), TN(2), TN(3), TN(5), VA(6), VA(8)
Grout Curtains	None
Ground Water Diversion Wells	None
<b>Sediment control</b>	
Site Stabilization	TN(4), VA(6)
Channel, Ditch, and Gulley Stabilization	None
Check Dams	None
<b>Geochemical Best Management Practices</b>	
Alkaline Addition	PA(1), PA(2), PA(8), PA(10), PA(11), PA(12), PA(14), PA(17), PA(18), PA(19), TN(3), TN(4), TN(5), WV(1), WV(3), WV(5), WV(6), WV(8)
Special Handling of Acid Forming Materials	AL(1), AL(2), AL(7), AL(10), AL(11), AL(14), KY(1), KY(2), KY(3), KY(4), PA(3), PA(5), PA(6), PA(7), PA(8), PA(11), PA(13), PA(14), PA(19), TN(1), TN(2), TN(4), VA(1), VA(2), VA(3), VA(4), VA(6), VA(7), WV(1), WV(4), WV(5), WV(6), WV(7), WV(8), WV(9)
Bactericides/ Anionic Surfactants	PA(10), VA(4)
<b>Passive Treatment</b>	TN(2), TN(3), TN(5), VA(4), VA(8), WV(5)



**Table A.6: Mines and the BMPs implemented**

<b>Mine ID</b>	<b>BMPs Implemented</b>
<b>AL(1)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Special Handling of Acid Forming Materials
<b>AL(2)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>AL(3)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches
<b>AL(4)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches
<b>AL(5)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches
<b>AL(6)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>AL(7)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>AL(8)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>AL(9)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>AL(10)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>AL(11)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Special Handling of Acid Forming Materials
<b>AL(12)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines
<b>AL(13)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>AL(14)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>AL(15)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>AL(16)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>KY(1)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>KY(2)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials, Daylighting of Underground Mines
<b>KY(3)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Sealing and Rerouting of Mine Water from Abandoned Workings, Special Handling of Acid Forming Materials
<b>KY(4)</b>	Regrading Abandoned Mine Spoil, Revegetation, Sealing and Rerouting of Mine Water from Abandoned Workings, Special Handling of Acid Forming Materials
<b>PA(1)</b>	Regrading Abandoned Mine Spoil, Revegetation, Sealing and Rerouting of Mine Water from Abandoned Workings, Alkaline Addition, Daylighting of Underground Mines
<b>PA(2)</b>	Regrading Abandoned Mine Spoil, Revegetation, Alkaline Addition
<b>PA(3)</b>	Regrading Abandoned Mine Spoil, Revegetation, Sealing and Rerouting of Mine Water from Abandoned Workings, Daylighting of Underground Mines, Special Handling of Acid Forming Materials
<b>PA(4)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>PA(5)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials

<b>Mine ID</b>	<b>BMPs Implemented</b>
<b>PA(6)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Special Handling of Acid Forming Materials
<b>PA(7)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Special Handling of Acid Forming Materials
<b>PA(8)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Alkaline Addition, Special Handling of Acid Forming Materials
<b>PA(9)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines
<b>PA(10)</b>	Regrading Abandoned Mine Spoil, Revegetation, Sealing and Rerouting of Mine Water from Abandoned Workings, Bactericides/ Anionic Surfactants, Alkaline Addition
<b>PA(11)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Alkaline Addition, Special Handling of Acid Forming Materials
<b>PA(12)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Alkaline Addition
<b>PA(13)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>PA(14)</b>	Regrading Abandoned Mine Spoil, Revegetation, Alkaline Addition, Special Handling of Acid Forming Materials
<b>PA(15)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>PA(16)</b>	Regrading Abandoned Mine Spoil, Revegetation
<b>PA(17)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Alkaline Addition
<b>PA(18)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Alkaline Addition
<b>PA(19)</b>	Regrading Abandoned Mine Spoil, Revegetation, Alkaline Addition, Special Handling of Acid Forming Materials
<b>TN(1)</b>	Regrading Abandoned Mine Spoil, Revegetation, Pit Floor Drains, Special Handling of Acid Forming Materials
<b>TN(2)</b>	Regrading Abandoned Mine Spoil, Revegetation, Pit Floor Drains, Special Handling of Acid Forming Materials, Passive Treatment
<b>TN(3)</b>	Regrading Abandoned Mine Spoil, Revegetation, Pit Floor Drains, Daylighting of Underground Mines, Special Handling of Acid Forming Materials, Sealing and Rerouting of Mine Water from Abandoned Workings, Alkaline Addition, Passive Treatment

<b>Mine ID</b>	<b>BMPs Implemented</b>
<b>TN(4)</b>	Regrading Abandoned Mine Spoil, Revegetation, Sealing and Rerouting of Mine Water from Abandoned Workings, Alkaline Addition, Special Handling of Acid Forming Materials, Site Stabilization
<b>TN(5)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion, Ditches, Pit Floor Drains, Alkaline Addition, Passive Treatment
<b>VA(1)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Installation of Surface Water Diversion Ditches, Special Handling of Acid Forming Materials
<b>VA(2)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>VA(3)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>VA(4)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Special Handling of Acid Forming Materials, Bactericides/ Anionic Surfactants, Passive Treatment
<b>VA(5)</b>	Regrading Abandoned Mine Spoil, Revegetation, Low-Permeability Caps or Seals
<b>VA(6)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Sealing and Rerouting of Mine Water from Abandoned Workings, Special Handling of Acid Forming Materials, Site Stabilization, Pit Floor Drains
<b>VA(7)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Special Handling of Acid Forming Materials
<b>VA(8)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Pit Floor Drains, Passive Treatment
<b>WV(1)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines, Alkaline Addition, Installation of Surface Water Diversion Ditches, Special Handling of Acid Forming Materials
<b>WV(2)</b>	Regrading Abandoned Mine Spoil, Revegetation, Daylighting of Underground Mines
<b>WV(3)</b>	Regrading Abandoned Mine Spoil, Revegetation, Alkaline Addition
<b>WV(4)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>WV(5)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Alkaline Addition, Passive Treatment, Special Handling of Acid Forming Materials
<b>WV(6)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Alkaline Addition, Special Handling of Acid Forming Materials
<b>WV(7)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>WV(8)</b>	Regrading Abandoned Mine Spoil, Revegetation, Installation of Surface Water Diversion Ditches, Alkaline Addition, Special Handling of Acid Forming Materials
<b>WV(9)</b>	Regrading Abandoned Mine Spoil, Revegetation, Special Handling of Acid Forming Materials
<b>WV(10)</b>	Regrading Abandoned Mine Spoil, Revegetation

